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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/389,085	09/02/1999	JOE H. MULLINS	UNME-0019-1	4882

22506 7590 02/01/2002

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EXAMINER

GRIER, LAURA A

ART UNIT PAPER NUMBER

2644

DATE MAILED: 02/01/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

PRH

Office Action Summary

Application No.

09/389,085

Applicant(s)

MULLINS, JOE H.

Examiner

Laura A Grier

Art Unit

2644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 6-20 is/are rejected.
- 7) ☒ Claim(s) 4 and 5 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claim 1** is rejected under 35 U.S.C. 103(a) as being unpatentable over Van Den Thillart et al. (herein, "Thillart"), U. S. Patent No. 5771304, in view of Hobelsberger, U. S. Patent No. 5812686.

Regarding **claim 1**, Thillart discloses an apparatus including a loudspeaker unit, loudspeaker unit, and housing for a loudspeaker unit. Thillart's disclosure comprises a cabinet with an opening and a speaker for emitting audio, which is mounting inversely or invertedly in the cabinet (col. 2, lines 49-67 and col. 3, line 1, and 36-44; and figure 3), which reads on a "cabinet and a first speaker". However, Thillart fails to specifically disclose a sensor for sensing pressure. The examiner maintains that such a sensor was well known in the art.

Regarding the sensor, in a similar field of endeavor, Hobelsberger discloses a sensing means for sensing pressure of speaker mounted in the housing Col. 1, lines 46-56).

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Thillart by providing a sensor for the

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purpose of sensing the air pressure of the cabinet in which a driving loudspeaker is enclosed for adjustment of acoustic reflections (col. 1, lines 31-35).

Regarding **claim 2**, Thillart and Hobelsberger disclose everything claimed as applied above (see claim 1). Thillart further discloses a low frequency audio system (col. 1, lines 24-36).

Regarding **claim 6**, Thillart and Hobelsberger disclose everything claimed as applied above (see claim 1). Hobelsberger further discloses the claimed limitations (col. 3, lines 45-64).

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Thillart by providing such adjusting means providing efficient adjustment of acoustic reflections (col. 1, lines 31-35) within the cabinet.

Regarding **claim 10**, Thillart and Hobelsberger disclose everything claimed as applied above (see claim 1). Further, Hobelsberger discloses a sound absorbing material (col. 3, lines 58-60), which constitutes the "acoustic absorbing material".

Regarding **claim 11**, Thillart and Hobelsberger disclose everything claimed as applied above (see claim 1). A passive radiator is inherently taught in figure 3 of Thillart.

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3. **Claim 12** is rejected under 35 U.S.C. 103(a) as being unpatentable over Van Den Thillart et al. in view of Hobelsberger, and further in view of Bertagni et al, U. S. Patent No. 5693917.

Regarding **claim 12**, Thillart and Hobelsberger fail to specifically disclose electrodynamic planar speaker. The examiner maintains that such a loudspeaker was well known in the art.

Regarding the electrodynamic planar speaker, in a similar field of endeavor, Bertagni disclose a planar diaphragm loudspeaker comprising electromagnetic drivers, which constitutes an electrodynamic planar speaker.

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Thillart and Hobelsberger by incorporating an electrodynamic planar speaker for the purpose of dynamic quality and good efficiency in sound output; and with improved frequency response as taught by Bertagni in col. 3, lines 62-67.

4. **Claim 13** is rejected under 35 U.S.C. 103(a) as being unpatentable over Van Den Thillart et al. in view of Hobelsberger.

Regarding **claim 13**, Thillart and Hobelsberger disclose everything claimed as applied above (see claim 1). However, Thillart and Hobelsberger fail to specifically disclose electrostatic planar speaker. The examiner takes official notice of the fact that an electrostatic planar speaker was well known in the art.

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It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Thillart and Hobelsberger by providing an electrostatic planar speaker for the purpose of employing a small speaker in size, yet providing good sound quality.

5. Regarding **claims 14-16, 19-20**, they are interpreted and thus rejected for the same reasons set forth above in **claims 1-3, and 12-13**, respectively. Since **claims 14-16 and 19-20** disclose a method, which corresponds to the apparatus/system of **claims 1-3 and 12-13**; the method is obvious in that it simply provides functionality for the structure of **claims 1-3 and 12-13**.

6. **Claim 1, 3, 8-9 and 17-18**, are rejected under 35 U.S.C. 103(a) as being unpatentable over Thillart in view of Tanaka et al. U. S. Patent No. 5588065.

Regarding **claim 1**, Thillart discloses an apparatus including a loudspeaker unit, loudspeaker unit, and housing for a loudspeaker unit. Thillart's disclosure comprises a cabinet with an opening and a speaker for emitting audio, which is mounting inversely or invertedly in the cabinet (col. 2, lines 49-67 and col. 3, line 1. and figure 3), which reads on a "cabinet and a first speaker". However, Thillart fails to specifically disclose a sensor for sensing pressure. The examiner maintains that such a sensor was well known in the art.

Regarding the sensor, in a similar field of endeavor, Tanaka et al. discloses a sensor indicative of sensing pressure (col. 13, lines 24-48).

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Thillart by providing a sensor for the purpose of sensing the air pressure and/or like acoustical components of the cabinet in which a driving loudspeaker is enclosed for adjustment of acoustic reflections during audio output.

Regarding **claim 3**, Thillart and Tanaka et al. disclose everything claimed as applied above (see claim 1). Tanaka et al. further discloses the sensor as being a moving-coil sensor (col. 13, lines 24-28), which constitutes the sensor as speaker, which indicates the sensor as a "second speaker".

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Thillart and Tanaka et al. by implementing the sensor as a speaker for the purpose of acquiring the optimal audio system as desired and for reasons inherently taught by Tanaka et al. in col. 13, lines 24-48.

Regarding **claim 7**, the claimed limitations regarding the width of the first speaker and the sensor, are inherently taught in the rejection of claim 1 (figures).

Regarding **claims 8-9 and 17-18**, Thillart and Tanaka et al. discloses everything claimed as applied above see (claims 1 and 14, respectively). It would have been obvious to one ordinary skill at the time the invention was made to modify the invention of Thillart and Tanaka et al. by incorporating a desired signal-to-noise ratio value and well as a desired feedback factor for the desired optimal performance of a low frequency (15 to 300 Hz) audio system.

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Allowable Subject Matter

7. **Claims 4 and 5** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura A Grier whose telephone number is (703) 306-4819. The examiner can normally be reached on Monday - Friday, 7:30 am - 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester W. Isen can be reached on (703) 305-4386.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

Or faxed to:

(703) 872-9314 (for Technology Center 2600 only)


Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

LAG

January 28, 2002


FORESTER W. ISEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2700